Hurricane & Storm Damage Reduction Feasibility Study

#### DISTRICT COMMANDER'S BRIEFING



October 31, 2005



# MONTAUK POINT, NEW YORK DISTRICT COMMANDER'S BRIEFING

- Study Authority
- Study Area
- Existing Conditions & Problem Identification
- Plan Formulation Alternatives
- Selected Plan
- Benefits
- PGM Compliance
- Independent Technical Review
- Public Review
- Environmental Operating Principles
- Lessons Learned
- Study Sponsors

#### **Study Authority**

Resolution adopted by the Committee on Environment and Public Works of the U.S. Senate on May 15, 1991

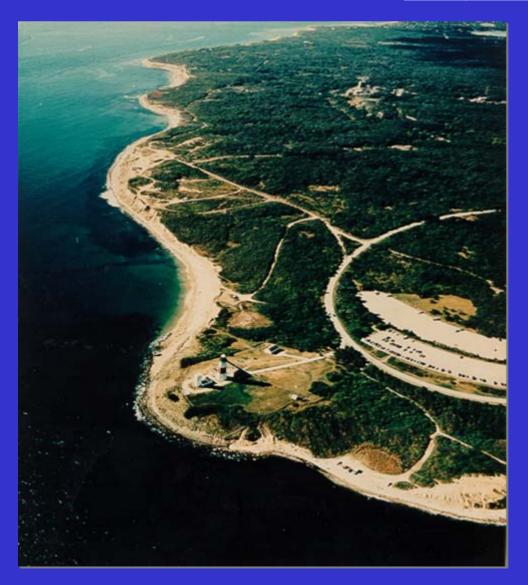
"Resolved by the Committee on Environment and Public Works of the United States Senate, that the Secretary of the Army is hereby requested to review the report of the Chief of Engineers on Fire Island to Montauk Point, New York, published as House Document Number 86-425, 86th Congress, 2nd session, and other pertinent reports, to determine whether modifications of the recommendations contained therein are advisable at the present time, with a view to preserving, restoring, and protecting Montauk Point and vicinity, including the historic Montauk Lighthouse and associated facilities, from erosion, environmental degradation, and coastal storm damage."

Recon Report - Feb 1993; FCSA - April 2000 with NYSDEC

#### **Study Area**



#### **Study Area**



• Historic functioning Lighthouse sits on bluff, 70-feet above MSL

• Surrounding area operated as State park, used by fishermen, surfers and sightseers

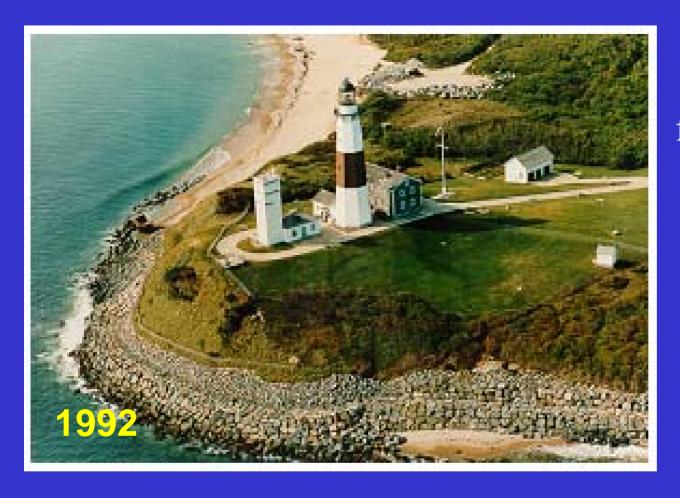
#### **Study Area**



 Constructed in 1796, commissioned by
 President Washington

 Listed on National Register of Historic Places

# MONTAUK POINT, NEW YORK Study Area



• Originally located 300 feet from edge of cliff, now only 50 feet

 Bluff and beach critical elements of complex stability

# 1946 – original revetment constructed by Corps of Engineers



### Eventual failure of 1946 revetment ('80s)



### **Recent Damaging Storms**

- Hurricane Bob, 1991
- Halloween Storm 1991
- Northeaster, 1992
- Other Northeasters & nearby misses by hurricanes, 1991 1996



#### **Without-Project Future Conditions**

• U.S. Coast Guard & Montauk Historical Society have attempted to protect the bluff

• Emergency repairs conducted in 1960s, 70s, 80s, 90s

• Emergency repairs, financed with limited local funds, will not be able to keep the revetment structure intact, leading to loss of lighthouse complex

Pre & post construction of 1992 revetment built by U.S. Coast Guard & Montauk Historical Society





# Completed 1992 revetment currently in place





#### **Existing Conditions**

Present shore protection measure is not designed to withstand significant storms:

- lack of buried toe
- inadequate stone size
- insufficient overtopping protection

#### **Problem Identification**

• Existing conditions result in total loss of bluff and Lighthouse Complex

• Emergency efforts expected to continue, will not provide long-term protection

• Violation of National Historic Preservation Act of 1966, as amended

#### **Plan Formulation Alternatives**

Various alternatives considered during Feasibility Study:

- No Action Plan
- Stone Revetment
- Offshore Breakwater with Beach Fill
- T-groins with Beach Fill
- Beach Fill
- Relocation of the Lighthouse

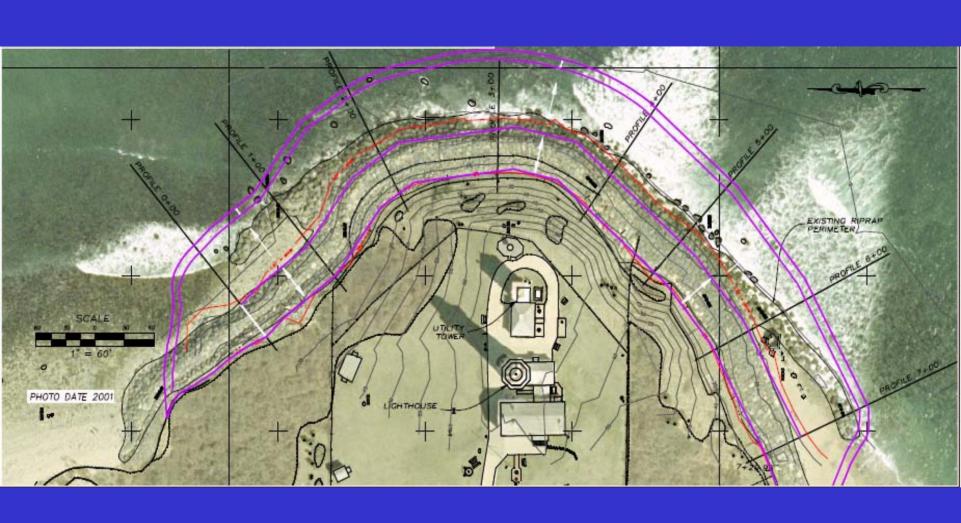
#### Selected Plan - STONE REVETMENT

Replace and improve the existing stone revetment

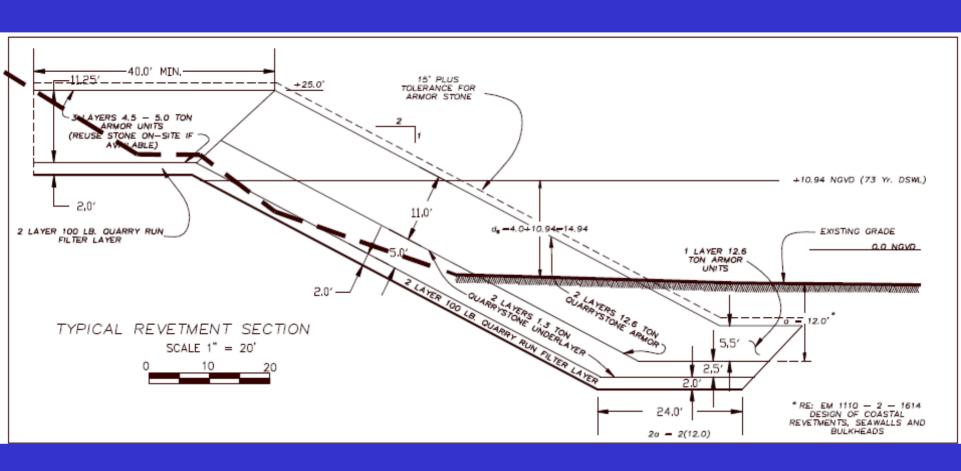
- 840-ft. in length
- crest width of 40-ft. at elevation +25 ft. NGVD
- 1V:2H side slopes
- 12.6-ton quarrystone armor units
- heavily embedded toe

- \$14 million total project first cost
- 50% Fed, 50% Non Fed cost-sharing (\$7 million each)

#### **Selected Plan - Layout**



#### **Selected Plan - Typical Cross Section**



# MONTAUK POINT, NEW YORK Benefits

Benefits claimed are avoided storm damage costs;

- Loss of the lighthouse complex
- Associated costs for the preservation of artifacts
- Local costs foregone for the loss of land value
- Lost visitation benefits to lighthouse and State Park

#### Economics Analysis (October 2004 price level)

Annual Storm Damage Benefits	\$540,000
Annual Recreation Benefits	\$1,040,000
Annual Recreation Benefits Used for Justification	\$540,000
Total Benefits Used for Justification	\$1,080,000
Annual Costs	\$890,000
Net Benefits	\$190,000
BCR	1.2
Total Benefits	\$1,580,000
Total Net Benefits	\$690,000
Final BCR	1.8

#### PGM Compliance - Policy Exemption For Private Non-Profit Land Owner

- Protected land deeded to Montauk Historical Society (MHS)
- The MHS is private, non-profit association.
- Existing Corps policy no Federal interest in protection of a property owned by a single private non-profit entity
- Although MHS is single, private landowner, they must by deed restriction & State charter, act as public entity akin to agencies of State and local governments
- Policy Exemption granted by Assistant Secretary of the Army (Civil Works)

#### **Independent Technical Review**

### New York District & Philadelphia District Center of Expertise Reviews

- Confirmed design assumptions
- Analyses technically sound
- Failure scenario well supported
- Downdrift impacts insignificant

#### **Public Review**

• Construction of project causes no significant long-term environmental impacts

• Non-environmental issues raised include recreational use impacts - public access, hiking, sight-seeing, aesthetic views, fishing and surfing

• Only limited short term impacts during construction

#### **Environmental Operating Principles**

Consistent with Environmental Operating Principles

• Various formal public, inter-agency and user group meetings

• Protection of lighthouse complex & archaeological resources provided by plan of improvement with no long-term significant impacts or changes to project area



#### **Study Sponsors**



- Fred Nuffer
  Assistant Division Director
  Division of Water
- Mike Stankiewicz Chief, Flood Protection Flood Protection Bureau



Greg Donohoue
 Director of Erosion Control

# **North Atlantic Division Position**

- Concurrence with NAN District Commander's findings & recommendations.
- Confirm that the report complies with all applicable policy & laws in place at this time.
- Anticipate general public support in response to the draft Chief's Report recommendation.
- Montauk Point, in particular the lighthouse has long been a cherished public resource, which we support protecting to insure that future generations of Americans can enjoy.

# **Quality Assurance Briefing:**North Atlantic Division

- QC Report dated October 2005.
- Review Certification Signatures for entire study team and QC team members are listed.
- Resolved policy concerns include:

- Damages and benefits categories.
- Cost-sharing.
- Exception to single private owner policy.

#### **Certification of Legal & Policy Compliance**

- Legal certification of feasibility report made by NAN District Counsel on 17 October 2005.
- Policy Compliance: ITR certification includes signatures of review team. All comments have been resolved by NAN and are documented in QC Report.
- Examples of resolved ITR comments:
  - Design methodology & analyses technically sound
  - ✓ Downdrift impacts
  - ✓ Storm damage reduction benefits.

#### Civil Works Review Board

Significant Policy Review Concerns

# Montauk Point, New York Hurricane and Storm Damage Reduction Project

Lee Ware, P.E.
Office of Water Project Review
Policy and Policy Compliance Division

Washington, DC – October 31, 2005



## Areas of Policy Concern:

- Without Project Condition-Losses
- Cost-sharing
- Sponsor OMRR&R
- Single Owner Beneficiary
- Real Estate Requirements



# Without Project Condition – Losses

Concern: Initial AFB materials did not account for the losses associated with failure of the existing revetment protection.

Reason: Guidance for CW projects requires accurate without project condition and proper characterization of risks and failure potential in order to determine damages, benefits, and overall justification

Resolution: District revised engineering and economic analysis to appropriately measure the potential risks and consequences of failure on loss of the bluff lands as a proxy for local costs foregone, and recreational value, and the lighthouse complex.



# **Cost-Sharing**

Concern: The AFB materials incorrectly recommended for 65/35 cost sharing

Reason: Protection of property that provides for historic park and recreational use is cost shared 50%/50%.

Resolution: Draft and final report recommended 50%/50% cost sharing consistent with historic park and recreational land use.



# Sponsor OMRR&R

Concern: AFB materials did not account for sponsor needing to perform all OMRR&R responsibilities when design level of protection was exceeded.

Reason: Corps policy requires that sponsor perform all OMRR&R.

Resolution: Draft and final report clarified local performance of all OMRR&R.



# Single Owner Beneficiary

Concern: The AFB response on cost sharing clarified that the protected property is not a public park, but is owned by a private non-profit entity. This raised further policy concern regarding a single owner beneficiary.

Reason: Corps does protect single owner properties except for publicly-owned property that benefits the general public.

Resolution: A waiver was granted by ASA(CW) to single owner policy based on its benefits to the general public and relationship to the surrounding park. Therefore, 50%/50% cost sharing is appropriate.



# Real Estate Requirements

Concern: The real estate plan identifies a requirement for a temporary work area easement which is not appropriate to provide access for construction, operation and maintenance of the proposed project.

Reason: The proposed estate provides rights not suited for access purposes and the limited duration fails to provide access for operation and maintenance purposes as required by para. 12-16 of ER 405-1-12.

Resolution: Review team recommends that the real estate plan be revised to identify a requirement for a perpetual road easement.

Resolution: Concern is unresolved.

Impact: Will not delay release, can be resolved during review.



# HQUSACE Policy Compliance Review Team RECOMMENDATION

Release the report and EIS for S&A Review



#### **Lessons Learned**

• Utilize information from other similar type projects (Cape Hatteras example)

• Be prepared for unexpected issues (private non-profit landowner)

#### **Lessons Learned:**

#### **North Atlantic Division**

Need an approach to value protecting cultural resources in future studies.